



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/060,520	01/30/2002	Wilfried Knott	512425-2070	8463
20999	7590	04/21/2004		
FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			EXAMINER MORILLO, JANELLE COMBS	
			ART UNIT	PAPER NUMBER
			1742	
DATE MAILED: 04/21/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

Office Action Summary	Application No.	Applicant(s)	
	10/060,520	KNOTT ET AL.	
	Examiner	Art Unit	
	Janelle Combs-Morillo	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 13 and 19-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14-18 and 24-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 090302 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of in Paper No. 102403 is acknowledged. The traversal is on the ground(s) that the examiner can search the entire application without serious burden. This is not found persuasive because the process and product clearly require separate searches, and the species listed in claim 42, etc. require separate searches as well.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7, 9-12, 15-18, 24-28, 30-39, 41, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 09-241780 (JP'780).

Concerning independent claims 1 and 24, JP'780 teaches a method of making a metal foam by mixing 0.1-5wt% titanium hydride blowing agent with molten metal (such as an aluminum alloy, see Table 1), pouring into a mold, and reheating to undergo foaming (abstract). JP'780 does not mention the presence of a "die casting machine comprising a sleeve or short chamber", however, said limitation is an apparatus limitation, and does not impart patentability to the presently claimed method claim. Because the mold taught by JP'780 is a suitable die cavity, and because JP'780 teaches a process of producing a metal foam substantially as

Art Unit: 1742

presently claimed, it is held that JP'780 has created a prima facie case of obviousness of the presently claimed invention.

Concerning claims 2, 7, 11, 12, 16-18, 25-28, 30, 31, 32, 37, 41, and 42, the process stated above meets these dependent claim limitations.

Concerning claims 3, 5, 6, 33, 35, and 36, Selection of any order of mixing ingredients is prima facie obvious (see MPEP 2144.04), Ex parte Rubin , 128 USPQ 440 (Bd. App. 1959) (Prior art reference disclosing a process of making a laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render prima facie obvious claims directed to a process of making a laminated sheet by reversing the order of the prior art process steps.). See also In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious.)

Concerning claims 4 and 34, though JP'780 does not mention mixing in "a sleeve or short chamber", however, said limitation is an apparatus limitation, and does not impart patentability to the presently claimed method claim. JP'780 teaches a process of producing a metal foam substantially as presently claimed, including mixing prior to filling the mold.

Concerning claims 9 and 38, which mention said cavity is underfilled, JP'780 mentions an expansion of $\geq 65\%$ (see [0019], Table 1). It is within the level of one of ordinary skill in the art, given the disclosure of JP'780, to underfill the mold in order to prepare for expansion.

Concerning claims 10, 15, and 39, JP'780 at [0024] teaches that the mold is heated in a furnace along with the alloy.

Art Unit: 1742

4. Claims 8, 14, 29, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 09-241780 (JP'780) as applied to claims above, in view of Knott (US 5,972,285).

Concerning claims 8, 14, and 40 which state the die cavity is not heated or said process is a cold-chamber process, though JP'780 teaches a process of forming a metal foam by heating the mold and metal in a furnace, Knott teaches a process of placing a foamable metal (with added blowing agent) into a cavity in a mold, and adding heat to said foamable metal (i.e. not directly heating the die/cavity, see column 6 lines 32-38). It would have been obvious to one of ordinary skill in the art to perform a process of foaming, while only heating the metal, as taught by Knott, because said process is held to provide a suitable foamed metal.

Concerning claim 29, Knott teaches that the blowing agent can be an autocatalytically produced light metal hydride (column 2 lines 48-53). Knott teaches that said produced hydride provides for more uniform foaming (column 3 lines 1-3). It would have been obvious to one of ordinary skill in the art to use an autocatalytically produced light metal hydride, as taught by Knott, for the blowing agent of JP'780, because Knott teaches that said hydride is suitable as a foam blowing agent, and because said hydride provides for more uniform foaming.


Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.


Art Unit: 1742

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

Jcm


April 14, 2004